

Exhibit A: Claim Chart

Exhibit A contains Microsoft's Preliminary Claim Construction. The chart presents the construction in the order of the asserted "Mini-Markman" claims. Terms set forth in the claims (column 2) in bold are claim terms that the parties dispute. Phrases set forth in the claims in italics are claim phrases that the parties dispute. Terms set forth in Microsoft's construction (column 3) in bold, with initial capitalization are terms Microsoft has construed.

'193 Asserted Claim 1

| | <u>'193 Claim 1</u> | <u>MS Construction</u> |
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| 1. | 1. A method comprising: | <u>Claim as a whole:</u> The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 2. | <i>receiving a digital file including music,</i> | <p><u>receiving a digital file including music:</u> This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites a step or result ("receiving") without reciting an action that achieves that result. The specification does not clearly link any particular action to this recited step. Part of the recited function is performed when the Digital File is received by Communications Controller 666 and passed through I/O Controller 600 to SPE 503/SPU 500 (specifically incorporates the SPU Encryption/Decryption Engine 522 that is used principally as an aspect of secure communications between VDE secure subsystems) and NVRAM 534b (which stores sensitive information such as cryptographic Key(s) used for Authentication.) Rights Operating System 602 manages the hardware within SPU 500 that performs Authentication of the secure container as part of the receiving step.</p> <p>The recited function requires: obtaining a VDE Secure Container encapsulating a Digital File, Authenticating the intended recipient in accordance with VDE Controls Associated With the Secure Container, and accepting the Secure Container.</p> <p>The qualifier "including music" recites non-functional descriptive material and is not a patentable limitation.</p> <p><u>digital file:</u> A named, static unit of storage allocated by a "file system" and Containing digital information. A Digital File enables any application using the "file system" to randomly access its contents and to distinguish it by name from every other such unit. A copy of a Digital File is a separate Digital File. (A "file system" is the portion of the operating system that translates requests made by application programs for operations on "files" into low-level tasks that can control storage devices such as disk drives.)</p> <p><u>including:</u> As to data, storing within, as opposed to Addressing. As to hardware, physically present within.</p> |
| 3. | storing said digital file in a first secure memory of a first device; | <p><u>digital file:</u> see item #2 above</p> <p><u>secure memory:</u> A processor-addressable Memory within a special-purpose Secure Processing Unit which is isolated from the rest of the world by (and encapsulated within) a Tamper Resistant Barrier. "Processor-addressable" means that a connected processor can use the Secure Memory's physical addresses as the operand in a processor instruction such as LOAD or STORE or equivalent instruction. A "Memory" is not a "Secure Memory" merely because it stores encrypted, signed, and/or sealed data; is accessible from a Protected Processing Environment; or is within an appliance that is located at a trusted facility with non-VDE physical Security and user-identity Authentication procedures.</p> |

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| | | <p><u>secure</u>: A state in which all users of a system are guaranteed that all information, processes, and devices within the system, shall have their availability, secrecy, integrity, authenticity and nonrepudiation maintained against all of the identified threats thereto. "Availability" means the property that information is accessible and usable upon demand by authorized persons, at least to the extent that no user may delete the information without Authorization. "Secrecy," also referred to as confidentiality, means the property that information (including computer processes) is not made available or disclosed to unauthorized persons or processes. "Integrity" means the property that information has not been altered either intentionally or accidentally. "Authenticity" means the property that the characteristics asserted about a person, device, program, information, or process are genuine and timely, particularly as to identity, data integrity, and origin integrity. "Nonrepudiation" means the property that a sender of information cannot deny its origination and that a recipient of information cannot deny its receipt.</p> <p><u>memory</u>: A medium in which data (including executable instructions) may be stored and from which it may be retrieved.</p> |
| 4. | storing information associated with said digital file in a secure database stored on said first device, | <p><u>associated with</u>: A specific, direct, persistent, and binding relationship with one or more discrete items. Code that processes information but is merely a general-purpose component of an installation is not "Associated With" that information. In VDE, an association between a unit of Executable code and particular information, or between particular control information and a Secure Container, cannot be broken except as Allowed by execution (within a Secure Processing Environment) of assigned VDE Control(s) and satisfaction of all requirements imposed by such execution.</p> <p><u>digital file</u>: see item #2 above</p> <p><u>secure database</u>: A Secure Database is a database isolated from all users such that it is Protected from external observation; and accidental or intentional alteration or destruction. In VDE, a Secure Database stores tracking, billing, payment, and auditing data until the data is delivered Securely to an authorized Clearinghouse.</p> <p><u>secure</u>: see item #3 above</p> <p><u>database</u>: a data file that is defined and accessed using the facilities of a database management system (DBMS); this implies in particular (a) that it is defined by means of a schema that is independent of any programs that access the database, and (b) that it uses direct access storage.</p> |
| 5. | said information including at least one budget control and at least one copy control, | <p><u>including</u>: see item #2 above</p> <p><u>budget</u>: A unique type of "method" that specifies a decrementable numerical limitation on future Use (e.g., copying) of digital information and how such Use will be paid for, if at all. (A "method" is a collection of basic instructions, and information related to basic instructions, that provides context, data, requirements, and/or relationships for use in performing, and/or preparing to perform, basic instructions in relation to the operation of one or more electronic appliances.)</p> <p><u>budget control</u>: A VDE Control assembled to apply to a Budget, and enforcing that Budget. No process, user, or device is able to make the use identified by the Budget once the Budget's specified limitation on that Use has been reached.</p> <p><u>copy control</u>: A VDE Control which Controls Access to or some Use of a copy.</p> |
| 6. | said at least one budget control including a budget specifying the number of | <p><u>a budget specifying the number of copies which can be made of said digital file</u>: A Budget explicitly stating the total number of copies (whether or not decrypted, long-lived, or accessible) that (since creation of the Budget) Can Be made of the Digital</p> |

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| | <i>copies which can be made of said digital file;</i> | <p>File by any and all users, devices, and processes. No process, user, or device is able to make another copy of the Digital File once this number of copies has been made.</p> <p><u>budget, budget control</u>: see item #5 above</p> <p><u>including</u>: see item #2 above</p> <p><u>can be</u>: A specified act is able or authorized to be carried out, which otherwise cannot be carried out.</p> <p><u>digital file</u>: see item #2 above</p> |
| 7. | <i>and said at least one copy control controlling the copies made of said digital file;</i> | <p><u>controlling the copies made of said digital file</u>: Controlling Uses of and Accesses to all copies of the Digital File, by all users, processes, and devices, by executing each of the recited "at least one" Copy Control(s) within VDE Secure Processing Environment(s). Each Control Governs (Controls) only one action, which action may or may not differ among the different "at least one" Controls. All Uses and Accesses are prohibited and incapable of occurring except to the extent Allowed by the "at least one" Copy Control(s).</p> <p><u>copy control</u>: see item #5 above</p> <p><u>controlling</u>: Reliably defining and enforcing the conditions and requirements under which an action that otherwise cannot be taken, will be Allowed, and the manner in which it may occur. Absent verified satisfaction of those conditions and requirements, the action cannot be taken by any user, process or device. In VDE, an action is Controlled through execution of the applicable VDE Control(s) within a VDE Secure Processing Environment. More specifically, in VDE, Controlling is effected by use of VDE Controls, VDE Secure Containers, and VDE foundation (including VDE Secure Processing Environment, "object registration," and other mechanisms for allegedly individually ensuring that specific Controls are enforced vis-à-vis specific objects (and their content at an arbitrary granular level) and specific "users.")</p> <p><u>digital file</u>: see item #2 above</p> |
| 8. | <i>determining whether said digital file may be copied and stored on a second device based on at least said copy control;</i> | <p><u>determining whether said digital file may be copied and stored on a second device based on at least said copy control</u>: Determining whether this particular first device is Allowed to perform both of the following actions on this particular Digital File: (1) Copy it and (2) store it (as opposed to a copy of it) on a second device, by executing one or more VDE Control(s) (including "said" Copy Control Associated With this Digital File) within VDE Secure Processing Environment(s). To the extent that either of these two actions is not determined by this step to be permissible, that action is prohibited and incapable of occurring, and no user, process or device can perform it on this Digital File.</p> <p>This claim limitation's recitation of "said copy control" is inconsistent with the claim limitation "at least one copy control."</p> <p><u>digital file</u>: see item #2 above</p> <p><u>copy, copied, copying</u>: To reproduce all of a Digital File or other complete physical block of data from one location on a storage medium to another location on the same or different storage medium, leaving the original block of data unchanged, such that two distinct and independent objects exist. Although the layout of the data values in physical storage may differ from the original, the resulting "copy" is logically indistinguishable from the original. The resulting "copy" may or may not be encrypted, ephemeral, usable, or accessible.</p> |

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| | | <u>copy control</u> : see item #5 above |
| 9. | <i>if said copy control allows at least a portion of said digital file to be copied and stored on a second device,</i> | <p><u>if said copy control allows at least a portion of said digital file to be copied and stored on a second device</u>:</p> <p>This "if" condition creates two branches for the recited process, each of which must be performed. Each time the "if" condition is met, all four of the later-recited actions (Copying, transferring, storing, playing) must occur. Each time it is not met, each of these four actions must be prohibited and incapable of occurring.</p> <p>This "if" condition is met if and only if "said" Copy Control Allows any Portion (i.e., a part less than the whole) of the Digital File to be Copied and also Allows that same Portion of the Digital File (as opposed to the copy) to be stored on any second device. This "if" condition is based entirely on "said copy control" and thus is met, as above, even if other VDE Control(s) prohibit those actions.</p> <p>This claim limitation's recitation of "copy control allows at least a portion" is inconsistent with the claim limitation "whether said digital file may be copied ... based on at least said copy control."</p> <p>This claim limitation's recitation of "if said copy control allows at least a portion ... copying" is inconsistent with "said at least one budget control including a budget specifying the number of copies which can be made of said digital file" on whether said "copy control" or said "budget control" determines whether Copying is Allowed.</p> <p><u>copy control</u>: see item #5 above</p> <p><u>allow (allows)</u>: Actively permitting an action that otherwise cannot be taken (i.e., is prohibited) by any user, process, or device. In VDE, an action is Allowed only through execution (within a Secure Processing Environment) of the VDE Control(s) assigned to the particular action request, and satisfaction of all requirements imposed by such execution.</p> <p><u>portion</u>: A part of a whole, which is less than the whole</p> <p><u>digital file</u>: see item #2 above</p> |
| 10. | <i>copying at least a portion of said digital file;</i> | <p><u>copying at least a portion of said digital file</u>: Copying at least some Portion of the Digital File (as opposed to a copy thereof), by executing VDE Control(s) within VDE Secure Processing Environment(s). This Copied "Portion" may or may not be (or even include) the Portion referred to in the claim limitation "if said copy control allows at least a portion."</p> <p><u>copying</u>: see item #8 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 11. | <i>transferring at least a portion of said digital file to a second device including a memory and an audio and/or video output;</i> | <p><u>transferring at least a portion of said digital file to a second device</u>: Transferring to some second device (which may or may not be the "second device" referred to in the claim limitation "if said copy control allows at least a portion of said digital file to be copied and stored on a second device") at least some Portion of the Digital File (as opposed to a copy thereof), by executing VDE Control(s) within VDE Secure Processing Environment(s). This transferred Portion may or may not be (or even include) the Portion referred to in the claim limitation "if said copy control allows at least a portion," or the Portion referred to in the claim limitation "copying at least a portion."</p> |

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| | | <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 12. | <i>storing said digital file in said memory of said second device; and</i> | <p><u>storing said digital file</u>: Storing the entire Digital File received in the "receiving" step (as opposed to a copy of the Digital File or a Portion of the Digital File). This claim limitation's recitation of "storing said digital file" is inconsistent with the claim limitation "transferring at least a portion of said digital file."</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 13. | <i>including playing said music through said audio output.</i> | <p>This claim limitation's recitation of "playing ... through said audio output" is inconsistent with the claim limitation "an audio and/or video output."</p> |

'193 Asserted Claim 11

| | '193 - Claim 11 | MS Construction |
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| 14. | 11. A method comprising: | Claim as a whole: The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 15. | <i>receiving a digital file</i> | <u>receiving a digital file</u> : see item #2 above <u>digital file</u> : see item #2 above |
| 16. | storing information associated with said digital file in a secure database stored on said first device, | <u>associated with</u> : see item #4 above <u>digital file</u> : see item #2 above <u>secure database</u> : see item #4 above |
| 17. | said information including a first control; | <u>including</u> : see item #2 above <u>control</u> : Independent, special-purpose, Executable, which can execute only within a Secure Processing Environment. Each VDE Control is a Component Assembly dedicated to a particular activity (e.g., editing, modifying another Control, a user-defined action, etc.), particular user(s), and particular Protected information, and whose satisfactory execution is necessary to Allowing that activity. Each separate information Access or Use is independently Controlled by independent VDE Control(s). Each VDE Control is assembled within a Secure Processing Environment from independently deliverable modular components (e.g., Load Modules or other Controls), dynamically in response to an information Access or Use Request. The dynamic assembly of a Control is directed by a "blueprint" Record (put in place by one or more VDE users) Containing control information identifying the exact modular code components to be assembled and executed to Govern this particular activity on this particular information by this particular user(s). Each Control is independently assembled, loaded and delivered vis-à-vis other Controls. Control information and Controls are extensible and can be configured and modified by all users, and combined by all users with any other VDE Control information or Controls (including that provided by other users), subject only to "senior" user Controls. Users can assign control information (including alternative control information) and controls to an arbitrarily fine, user-defined Portion of the Protected information, such as a single paragraph of a document, as opposed to being limited to file-based Controls. VDE Controls reliably limit Use of the Protected information to Authorized activities and amounts. |
| 18. | <i>determining whether said digital file may be copied and stored on a second device based on said first control,</i> | <u>determining whether said digital file may be copied and stored on a second device based on said first control</u> : Determining whether said first Control, by itself, Allows this particular first device to perform both of the following actions on this particular Digital File: (1) Copy it and (2) store it (as opposed to a copy of it) on a second device, by executing the first VDE Control within VDE Secure Processing Environment(s). To the extent that either the Copy or store action is not determined by this step to be permissible, that action is prohibited and incapable of occurring, and no user, process or device can perform it on this Digital File. <u>digital file</u> : see item #2 above <u>copied</u> : see item #10 above <u>control</u> : see item #17 above |
| 19. | said determining step including <i>identifying said second device</i> and | <u>identifying said second device</u> : Identifying a second device sufficiently to distinguish it from all other devices, by executing VDE Control(s) within VDE Secure Processing Environment(s). |

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| | '193 - Claim 11 | MS Construction |
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| | determining whether said first control allows transfer of said copied file to said second device, | <p>whether said first control allows transfer of said copied file to said second device Whether the first Control, by itself, Allows the entire Digital File (which has been Copied at least once) (as opposed to the copy) to be moved to the identified second device. If not, that transfer is prohibited and incapable of occurring and no user, process or device can perform that action on this Digital File.</p> <p><u>Identifying/identify</u>: To establish as being a particular instance of a person or thing</p> <p><u>control</u>: see item #17 above</p> <p><u>allow</u>: see item #9 above</p> <p><u>copied file</u>: A Digital File that has been Copied. The "copied file" is not the copy itself. A "copy" is what is formed by a Copying operation, and it may or may not be encrypted, ephemeral, usable, or accessible.</p> |
| 20. | said determination based at least in part on the features present at the device to which said copied file is to be transferred; | <p><u>said determination based at least in part on the features present at the device</u>: Basing the determination at least in part upon all actual, current features of the device (as opposed to previously determined, reported, or measured features) which might affect the device's ability to prevent Unauthorized Access to or Use of (or both) the Digital File. This determination is done without trusting either the device or any user of the device. A device Identifier such as a serial number is not a "feature present at the device."</p> <p><u>copied file</u>: see item #19 above</p> |
| 21. | if said first control allows at least a portion of said digital file to be copied and stored on a second device, | <p><u>if said first control allows at least a portion of said digital file to be copied and stored on a second device</u>: This "if" condition creates two branches for the recited process, each of which must be performed. Each time the "if" condition is met, all four of the later-recited actions (Copying, transferring, storing, Rendering) must occur. Each time it is not met, each of these four actions must be disabled and prohibited and incapable of occurring.</p> <p>This "if" condition is met if and only if the first Control allows any Portion of the Digital File to be Copied and also allows that same Portion of the Digital File (as opposed to the copy) to be on any second device. This "if" condition is based entirely on the first Control and thus is met, as above, even if other VDE Controls prohibit those actions.</p> <p>This claim limitation's recitation of "said first control allows at least a portion" is inconsistent with the claim limitation "whether said digital file may be copied ... based on said first control."</p> <p><u>control</u>: see item #17 above</p> <p><u>allow</u>: see item #9 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 22. | copying at least a portion of said digital file; | <p><u>copying at least a portion of said digital file</u>: see item #10 above</p> <p><u>copying</u>: see item #8 above</p> <p><u>portion</u>: see item #9 above</p> |

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| | | <u>digital file</u> : see item #2 above |
| 23. | <i>transferring at least a portion of said digital file to a second device including a memory and an audio and/or video output;</i> | <p><u>transferring at least a portion of said digital file to a second device</u>: see item #11 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 24. | <i>storing said digital file in said memory of said second device; and</i> | <p><u>storing said digital file</u>: see item #12 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 25. | <i>rendering said digital file through said output.</i> | <p><u>rendering</u>: Playing content through an audio output (e.g., speakers) or displaying content on a video output (e.g., a screen).</p> <p><u>digital file</u>: see item #2 above</p> <p>This claim limitation's recitation of "said output" is inconsistent with the claim limitation "an audio and/or video output."</p> |

'193 Asserted Claim 15

| | '193 Claim 15 | MS Construction |
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| 26. | 15. A method comprising: | Claim as a whole: The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 27. | <i>receiving a digital file;</i> | <u>receiving a digital file</u> : see item #2 above This step must proceed in both "Authentication branches" of the process (i.e., regardless of the outcome of the "Authentication" step). <u>digital file</u> : see item #2 above |
| 28. | <i>an authentication step comprising:</i> | <u>an authentication step comprising</u> : Authenticating the first device and/or user of the first device without relying on trusting either, by executing VDE Control(s) within VDE Secure Processing Environment(s). <u>authentication</u> : To establish that the following asserted characteristics of something (e.g., a person, device, organization, document, file, etc.) are genuine: its Identity, its data integrity, (i.e., it has not been altered) and its origin integrity (i.e., its source and time of origination). |
| 29. | <i>accessing at least one identifier associated with a first device or with a user of said first device; and</i> | <u>accessing at least one identifier associated with a first device or with a user of said first device</u> : Securely Accessing at least one Identifier Associated With a single ("first") device or (as opposed to "and") with a single, current user of that device, by executing VDE Control(s) within VDE Secure Processing Environment(s). One of the "at least one identifier" may be Associated With a first device while another of the "at least one identifier" may be Associated With a user of said first device. <u>Access</u> (accessing): To satisfactorily perform the steps necessary to obtain something so that it can be Used in some manner (e.g., for information: copied, printed, decrypted, encrypted, saved, modified, observed, or moved, etc.). In VDE, access to protected information is achieved only through execution (within a Secure Processing Environment) of the VDE Control(s) assigned to the particular "access" request, satisfaction of all requirements imposed by such execution, and the Controlled Opening of the Secure Container Containing the information. <u>identifier</u> : Any text string used as a label naming an individual instance of what it Identifies. <u>associated with</u> : see item #4 above |
| 30. | <i>determining whether said identifier is associated with a device and/or user authorized to store said digital file;</i> | <u>determining whether said identifier is associated with a device and/or user authorized to store said digital file</u> : For each accessed "at least one identifier," determining whether the device with which it is Associated is one on which the Digital File may be stored (by any user) and/or whether the user with which it is Associated is one who may store the Digital File (on any device), by executing VDE Control(s) within VDE Secure Processing Environment(s). Each Identifier may be Associated With a device "and" a user, or with a device only, or with a user only. This claim limitation's recitation of "said identifier" is inconsistent with the claim limitation "at least one identifier." <u>identifier</u> : see item #29 above <u>associated with</u> : see item #4 above <u>authorized</u> : An action is permitted that otherwise cannot be taken by any user, process, or device. In VDE, an action is authorized only through execution of the applicable VDE Control(s) within a VDE Secure Processing Environment and |

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| | | <p>satisfaction of all requirements imposed by such execution.</p> <p>"not authorized": The action is prohibited and cannot be taken by any user, process, or device.</p> <p><u>digital file</u>: see item #2 above</p> |
| 31. | <p><i>storing said digital file in a first secure memory of said first device, but only if said device and/or user is so authorized, but not proceeding with said storing if said device and/or user is not authorized;</i></p> | <p><u>storing said digital file in a first secure memory of said first device, but only if said device and/or user is so authorized, but not proceeding with said storing if said device and/or user is not authorized</u>: This conditional step creates at least two "Authentication" branches for the recited process, each of which must be performed. Each time the condition is met, the recited "storing" must occur. Each time it is not met, the recited "storing" must not occur.</p> <p>If "storing" proceeds, then: storing in a Secure Memory of the first device, the entire Digital File received in the "receiving" step, as opposed to a copy of the File or a Portion of the Digital File, by executing VDE Control(s) within VDE Secure Processing Environment(s). If "storing" does not proceed: then the Digital File is not stored in the Secure Memory of the first device, and is prevented from being stored anywhere on the first device.</p> <p>This limitation is internally inconsistent on the circumstances under which the storing proceeds or does not proceed. For example, the first ("only if") phrase requires that the storing step proceeds if the device is Authorized (and the user is not) while the second ("but not") phrase requires that the storing step not proceed if the device is Authorized (and the user is not).</p> <p><u>authorized</u>: see item #30 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>secure memory</u>: see item #3 above</p> |
| 32. | <p><i>storing information associated with said digital file in a secure database stored on said first device, said information including at least one control;</i></p> | <p><u>storing information associated with said digital file in a secure database stored on said first device, said information including at least one control</u>: Storing information in a Secure Database, the entirety of information (including the "at least one Control") being Associated With the Digital File (as opposed to the file's contents independent of the file), by executing VDE Control(s) within VDE Secure Processing Environment(s).</p> <p>This step must proceed in both "Authentication branches" of the process (i.e., regardless of the outcome of the "Authentication" step).</p> <p><u>associated with</u>: see item #4 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>secure database</u>: see item #4 above</p> <p><u>control</u>: see item #17 above</p> |
| 33. | <p><i>determining whether said digital file may be copied and stored on a second device based on said at least one control;</i></p> | <p><u>determining whether said digital file may be copied and stored on a second device based on said at least one control</u>: see item #8 above</p> <p>This step must proceed in both "Authentication branches" of the process (i.e., regardless of the outcome of the "Authentication" step).</p> <p><u>digital file</u>: see item #2 above</p> |

| | 193 Claim 15 | MS Construction |
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| | | <p><u>copied</u>: see item #10 above</p> <p><u>control</u>: see item #17 above</p> |
| 34. | <i>if said at least one control allows at least a portion of said digital file to be copied and stored on a second device,</i> | <p><u>if said at least one control allows at least a portion of said digital file to be copied and stored on a second device</u>: see item #9 above</p> <p><u>control</u>: see item #17 above</p> <p><u>allow</u>: see item #9 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>copied</u>: see item #10 above</p> |
| 35. | <i>copying at least a portion of said digital file;</i> | <p><u>copying at least a portion of said digital file</u>: see item #10 above</p> <p><u>copying</u>: see item #8 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 36. | <i>transferring at least a portion of said digital file to a second device including a memory and an audio and/or video output;</i> | <p><u>transferring at least a portion of said digital file to a second device</u>: see item #11 above</p> <p>This step must proceed in both "Authentication branches" of the process (i.e., regardless of the outcome of the "Authentication" step).</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 37. | <i>storing said digital file in said memory of said second device; and</i> | <p><u>storing said digital file</u>: see item #12 above</p> <p>This step must proceed in both "Authentication branches" of the process (i.e., regardless of the outcome of the "Authentication" step). This claim limitation's recitation of "storing said digital file" is inconsistent with the claim limitation "transferring at least a portion of said digital file."</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 38. | <i>rendering said digital file through said output.</i> | <p><u>rendering</u>: see item #25 above</p> <p><u>digital file</u>: see item #2 above</p> <p>This claim limitation's recitation of "said output" is inconsistent with the claim limitation "an audio and/or video output."</p> |

'193 Asserted Claim 19

| | '193 Claim 19 | MS Construction |
|-----|--|--|
| 39. | 19. A method comprising: | <u>Claim as a whole:</u> The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 40. | <i>receiving a digital file at a first device;</i> | <u>receiving a digital file at a first device:</u> see item #2 above <u>digital file:</u> see item #2 above |
| 41. | <i>establishing communication between said first device and a clearinghouse located at a location remote from said first device;</i> | <u>establishing communication between said first device and a clearinghouse located at a location remote from said first device:</u> This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites a step or result ("establishing communication") without reciting an action that achieves that result. The specification does not clearly link any particular action to this recited step. Part of the recited function is performed by the Remote Procedure Call Manager 732 software of Rights Operating System 602 that controls I/O controller 660 and Communications Controller 666. Remote Procedure Call Manager handles all communication between VDE processes. The recited function is: creating and using a previously non-existent communications channel which is necessary and sufficient for exchanging information between the first device and a Clearinghouse. <u>clearinghouse:</u> A computer system that provides intermediate storing and forwarding services for both content and audit information, and which two or more parties trust to provide its services independently because it is operated under constraint of VDE Security. "Audit information" means all information created, stored, or reported in connection with an "auditing" process. "Auditing" means tracking, metering and reporting the usage of particular information or a particular appliance. |
| 42. | <i>said first device obtaining authorization information including a key from said clearinghouse;</i> | <u>authorization information:</u> "Control information" identifying the exact modular code components to be assembled into a VDE Control and executed within a Secure Processing Environment to permit a particular activity that otherwise cannot be taken (i.e., is prohibited). ("Control information" is information which identifies the exact modular code components and data which must be assembled and executed to Control a particular activity on particular information, of arbitrary, user-defined granularity, by particular user(s)). <u>key:</u> A bit sequence used and needed by a cryptographic algorithm to encrypt a block of plain text or to decrypt a block of cipher text. A Key is different from a key seed or other information from which the actual encryption and/or decryption Key is constructed, derived, or otherwise identified. In symmetric key cryptography, the same key is used for both encryption and decryption. In asymmetric or "public key" cryptography, two related keys are used; a block of text encrypted by one of the two keys (e.g., the "public key") can be decrypted only by the corresponding key (e.g., the "private key"). <u>clearinghouse:</u> see item #41 above |
| 43. | <i>said first device using said authorization information to gain access to or make at least one use of said first digital file,</i> | <u>using said authorization information to gain access to or make at least one use of said first digital file:</u> A user, process or device uses all of said Authorization Information in connection with executing VDE Control(s) within VDE Secure Processing Environment(s) to gain Access to or (as opposed to "and") make at least one Use of the Digital File received in the "receiving" step. Without using such Authorization Information, no Access to or Use of the file is Allowed. <u>authorization information:</u> see item #42 above <u>access:</u> see item #29 above |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'193 Claim 19</u> | <u>MS Construction</u> |
|-----|---|--|
| | | <p><u>use</u>: To use information is to perform some action on it or with it (e.g., copying, printing, decrypting, encrypting, saving, modifying, observing, or moving, etc.). In VDE, information Use is Allowed only through execution of the applicable VDE Control(s) and satisfaction of all requirements imposed by such execution.</p> <p><u>digital file</u>: see item #2 above</p> |
| 44. | <i>including using said key to decrypt at least a portion of said first digital file; and</i> | <p><u>including using said key to decrypt at least a portion of said first digital file</u>: The "at least one use of said digital file" must encompass decrypting at least a Portion of the Digital File using the Key.</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 45. | <i>receiving a first control from said clearinghouse at said first device;</i> | <p><u>receiving a first control from said clearinghouse at said first device</u>: This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites a step or result ("receiving") without reciting an action that achieves that result. The specification does not clearly link any particular action to this recited step. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: obtaining a VDE Secure Container encapsulating a first Control, authenticating the first device in accordance with VDE Controls Associated With the Secure Container, and accepting the Secure Container.</p> <p><u>control</u>: see item #17 above</p> <p><u>clearinghouse</u>: see item #41 above</p> |
| 46. | <i>storing said first digital file in a memory of said first device;</i> | <p><u>storing said first digital file in a memory of said first device</u>: Storing in a Memory of the first device, the entire Digital File (as opposed to a Portion thereof) received in the "receiving" step, by executing VDE Control(s) within VDE Secure Processing Environment(s).</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 47. | <i>using said first control to determine whether said first digital file may be copied and stored on a second device;</i> | <p><u>using said first control to determine whether said first digital file may be copied and stored on a second device</u>: Determining whether the first Control, by itself, allows this particular first device to perform both of the following actions on this particular Digital File: (1) Copy it and (2) store it (as opposed to a copy of it) on a second device, by executing the first VDE Control within VDE Secure Processing Environment(s). To the extent that either the Copy or store action is not determined by this step to be permissible, that action is prohibited and incapable of occurring, and no user, process or device can perform it on this Digital File.</p> <p><u>control</u>: see item #17 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>copied</u>: see item #10 above</p> |
| 48. | <i>if said first control allows at least a portion of said</i> | <p><u>if said first control allows at least a portion of said first digital file to be copied and stored on a second device</u>: see item #9 above</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'193 Claim 19</u> | <u>MS Construction</u> |
|-----|---|--|
| | <i>first digital file to be copied and stored on a second device,</i> | <p>This claim limitation's recitation of "first control allows at least a portion of said first digital file" is inconsistent with the claim limitation "whether said first digital file may be copied ... on a second device."</p> <p><u>control</u>: see item #17 above</p> <p><u>allow</u>: see item #9 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>copied</u>: see item #10 above</p> |
| 49. | <i>copying at least a portion of said first digital file;</i> | <p><u>copying at least a portion of said first digital file</u>: see item #10 above</p> <p><u>copying</u>: see item #8 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> |
| 50. | <i>transferring at least a portion of said first digital file to a second device including a memory and an audio and/or video output;</i> | <p><u>transferring at least a portion of said first digital file to a second device including a memory and an audio and/or video output</u>: see item #11 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above</p> <p><u>memory</u>: see item #3 above</p> |
| 51. | <i>storing said first digital file portion in said memory of said second device; and</i> | <p><u>storing said first digital file portion</u>: Storing the "at least a portion" which was transferred to the second device, of the Digital File received in the "receiving" step (as opposed to a copy of the Digital File).</p> <p><u>digital file</u>: see item #2 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>memory</u>: see item #3 above</p> |
| 52. | <i>rendering said first digital file portion through said output.</i> | <p><u>rendering</u>: see item #25 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>digital file</u>: see item #2 above.</p> <p>This claim limitation's recitation of "said output" is inconsistent with the claim limitation "an audio and/or video output."</p> |

'683 Asserted Claim 2

| | <u>'683 Claim 2</u> | <u>MS Construction</u> |
|-----|--|--|
| 53. | 2. A system including: | Claim as a Whole: The "system" is a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 54. | a first apparatus including, | |
| 55. | user controls, | <u>user controls</u> : Controls created, modified, or selected by a user to Control a particular Use or Access by the user to particular Protected information. <u>control</u> : see item #17 above |
| 56. | a communications port, | |
| 57. | a processor, | |
| 58. | a memory storing: | <u>memory</u> : see item #3 above |
| 59. | a first secure container | <u>secure container</u> : A VDE Secure Container is a self-contained, self-protecting data structure which (a) encapsulates information of arbitrary size, type, format, and organization, including other, nested, containers, (b) cryptographically protects that information from all unauthorized Access and Use, (c) provides encrypted storage management functions for that information, such as hiding the physical storage location(s) of its protected contents, (d) permits the Association of itself or its contents with Controls and Control information Governing Access to and Use thereof, and (e) prevents such Use or Access (as opposed to merely preventing decryption) until it is "opened." A Secure Container can be opened only as expressly Allowed by the associated VDE Control(s), only within a Secure Processing Environment, and only through decryption of its encrypted header. A Secure Container is not directly accessible to any non-VDE or user calling process. All such calls are intercepted by VDE. The creator of a Secure Container can assign (or allow others to assign) control information to any arbitrary Portion of a Secure Container's contents, or to an empty Secure Container (to Govern the later addition of contents to the container, and Access to or Use of those contents). A container is not a Secure Container merely because its contents are encrypted and signed. A Secure Container is itself Secure. All VDE-Protected information (including protected content, information about content usage, content-control information, Controls, and Load Modules) is encapsulated within a Secure Container whenever stored outside a Secure Processing Environment or Secure Database. |
| 60. | containing a governed item, | <u>containing</u> : Physically (directly) storing within, as opposed to Addressing. <u>governed item</u> : Information, of arbitrarily fine granularity, whose Access and Use by any user, process, or device is Controlled. |
| 61. | the first secure container governed item being at least in part encrypted; | <u>secure container</u> : see item #59 above <u>governed item</u> : see item #60 above |
| 62. | the first secure container having been received from a second apparatus; | <u>the first secure container having been received from a second apparatus</u> : The "first secure container" must Identify the single apparatus from which it was received, and that apparatus must be different from the first apparatus. Alternatively, if the Court does not construe this claim language as requiring the "first secure container" to identify the single apparatus from which it was received: This claim language has no patentable weight. It recites a step taken in the creation of the recited system, not a structural or functional characteristic of the system. One studying a particular system (as opposed to the process by which it was created) to compare it to the claimed system, could not distinguish a Secure Container received from another apparatus from, e.g., a Secure Container created on the first apparatus, and thus could not determine whether this step was satisfied. |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'683 Claim 2</u> | <u>MS Construction</u> |
|-----|--|--|
| | | <p>Receiving the Secure Container includes Authenticating the intended recipient in accordance with VDE Controls Associated With the Secure Container. The first Secure Container may be received as bar codes in a fax transmission, or filled ovals on a form delivered through physical mail.</p> <p><u>secure container</u>: see item #59 above</p> |
| 63. | a first secure container rule | <p><u>secure container rule</u>: A Rule that Governs a Secure Container Governed Item.</p> <p><u>rule</u>: A lexical statement that states a condition under which Access to or Use of VDE-Protected data will be Allowed by a VDE Control. A rule may specify how, when, where, and by whom a particular activity on particular information is to be Allowed.</p> |
| 64. | at least in part governing an aspect of access to or use of said first secure container governed item, | <p><u>an aspect of access to or use of</u>: Any one (as opposed to more than one) aspect of any Access to or (as opposed to "and") Use by any and all processes, users, and devices.</p> <p><u>governing</u>: see Control (v.) item #7 above</p> <p><u>aspect</u>: An aspect of an environment is a persistent element or property of that environment that can be used to distinguish it from other environments.</p> <p><u>access</u>: see item #29 above</p> <p><u>use</u>: To use information is to perform some action on it or with it (e.g., copying, printing, decrypting, encrypting, saving, modifying, observing, or moving, etc.). In VDE, information Use is Allowed only through execution of the applicable VDE Control(s) and satisfaction of all requirements imposed by such execution.</p> |
| 65. | the first secure container rule, the first secure container rule having been received from a third apparatus different from said second apparatus; and | <p><u>the first secure container rule having been received from a third apparatus different from said second apparatus</u>: The "first secure container rule" must have been received encapsulated within a VDE Secure Container, and the intended recipient must have been Authenticated in accordance with VDE Controls Associated With the Secure Container, and the "first secure container rule" must have been accepted by the first apparatus. The "first secure container rule" must identify the single apparatus from which it was received, and that apparatus must be different from the first apparatus. Alternatively, if the Court does not construe this claim language as requiring the "first secure container" to identify the single apparatus from which it was received: This claim language has no patentable weight. It recites a step taken in the creation of the recited system, not a structural or functional characteristic of the system. One studying a particular system (as opposed to the process by which it was created) to compare it to the claimed system, could not distinguish a Secure Container Rule received from another apparatus from, e.g., a Secure Container Rule created on the first apparatus, and thus could not determine whether this step was satisfied.</p> <p><u>secure container rule</u>: see item #63 above</p> |
| 66. | hardware or software used for receiving and opening secure containers, | <p><u>hardware or software used for receiving and opening secure containers</u>, <u>receiving</u>: This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites an undefined mechanism ("hardware or software") for performing a function (e.g., "Opening") without reciting particular structure that performs that function. The specification does not clearly link any particular structure to this recited function. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: the same single logical piece of either hardware or software (as opposed to both) must be capable of both receiving and Opening Secure</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'683 Claim 2</u> | <u>MS Construction</u> |
|-----|---|--|
| | | <p>Containers, this "receiving" including authenticating the intended recipient in accordance with VDE Controls Associated With the Secure Container, and this "Opening" performed by executing VDE Control(s) within VDE Secure Processing Environment(s).</p> <p><u>opening secure containers</u>: Establishing the requisites needed to attempt to access the contents of a Secure Container. Opening is a necessary but insufficient step before the contents of a Secure Container may be copied, decrypted, read, manipulated, or otherwise Used, or Accessed. No process, user, or device may Access or Use the contents of a Secure Container without first opening that Secure Container. A Secure Container may be opened only through execution of the assigned VDE Control(s) within a VDE Secure Processing Environment and satisfaction of all requirements imposed by such execution.</p> |
| 67. | <p><i>said secure containers each including the capacity to contain a governed item, a secure container rule being associated with each of said secure containers;</i></p> | <p><u>said secure containers each including the capacity to contain a governed item, a secure container rule being associated with each of said secure containers</u>: Each Secure Container referred to in the phrase "hardware or software used for receiving and opening secure containers" must have the capacity to Contain a Governed Item, and must have Associated With it a Secure Container Rule. By "each secure container referred to in the phase ...," is meant each Secure Container which the "hardware or software used for receiving and opening secure containers" is capable of receiving and Opening. The Secure Container Rule is Associated With the Secure Container itself, as opposed to a Governed Item.</p> <p><u>secure container</u>: see #59 above</p> <p><u>capacity</u>: Available storage space that is still capable of allocation. For example, a 650 MB blank CD, after sealing, has zero capacity because no new material may be stored within it.</p> <p><u>contain</u>: see item #60 above</p> <p><u>governed item</u>: see item #60 above</p> <p><u>secure container rule</u>: see item #63 above</p> <p><u>associated with</u>: see item #4 above</p> |
| 68. | <p><i>a protected processing environment at least in part protecting information contained in said protected processing environment from tampering by a user of said first apparatus,</i></p> | <p><u>protected processing environment at least in part protecting information contained in said protected processing environment from tampering by a user of said first apparatus</u>: A single VDE Secure Processing Environment, in addition to and not within the first apparatus, actively Preventing (not merely being capable of Preventing, and not merely resisting) any "user" of the first apparatus from Tampering with any and all information encapsulated by the Secure Processing Environment (as opposed to Tampering with the Secure Processing Environment itself). Other components may or may not provide part of this Protecting function. The Protecting function is provided by use of the disclosed "Component Assembly" (VDE Controls), "Secure Container," "Protected Processing Environment," "object registration," and other mechanisms of the purported "VDE" "invention" for allegedly individually ensuring the "Access Control" "handcuffs" between specific "Controls," specific "objects" (and their content at an arbitrary granular level), and specific "users."</p> <p><u>protected processing environment</u>: A uniquely identifiable, self-contained computing base trusted by all VDE nodes to protect the availability, secrecy, integrity and authenticity of all information identified in the February, 1995, patent application as being protected, and to guarantee that such information will be accessed and used only as expressly authorized by VDE Controls. At most VDE nodes, the Protected</p> |

| | <u>'683 Claim 2</u> | <u>MS Construction</u> |
|-----|---|---|
| | | <p>Processing Environment is a Secure Processing Environment which is formed by, and requires, a hardware Tamper Resistant Barrier encapsulating a special-purpose Secure Processing Unit having a processor and internal secure Memory. ("Encapsulated" means hidden within an object so that it is not directly accessible but rather is accessible only through the object's restrictive interface.) The barrier prevents all unauthorized (intentional or accidental) interference, removal, observation, and Use of the information and processes within it, by all parties (including all users of the device in which the Protected Processing Environment resides), except as expressly authorized by VDE Controls. A Protected Processing Environment is under Control of Controls and control information provided by one or more parties, rather than being under Control of the appliance's users or programs. Where a VDE node is an established financial Clearinghouse, or other such facility employing physical facility and user-identity Authentication Security procedures trusted by all VDE nodes, and the VDE node does not Access or use VDE-protected information, or assign VDE control information, then the Protected Processing Environment at that VDE node may instead be formed by a general-purpose CPU that executes all VDE "security" processes in Protected (privileged) mode.</p> <p>A Protected Processing Environment requires more than just verifying the integrity of Digitally Signed Executable programming prior to execution of the programming; or concealment of the program, associated data, and execution of the program code; or use of a password as its protection mechanism.</p> <p><u>protecting</u>: Maintaining the Security of.</p> <p><u>contain (contained)</u>: see item #60 above</p> |
| 69. | <p>said protected processing environment including hardware or software used for applying said first secure container rule and a second secure container rule in combination to at least in part govern at least one aspect of access to or use of a governed item contained in a secure container, and</p> | <p><u>hardware or software used for applying said first secure container rule and a second secure container rule in combination to at least in part govern at least one aspect of access to or use of a governed item contained in a secure container</u>: This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites an undefined mechanism ("hardware or software") for performing a function ("applying ... in combination") without reciting particular structure that performs that function. The specification does not clearly link any particular structure to this recited function. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: a single logical piece of either hardware or software (as opposed to both) to apply the two separate Rules in combination by assembling and executing a single Control, and to Govern any one or more aspects of any Access or Use by any process or user or device, of a Governed Item Contained in a Secure Container (which may or may not be any "Secure Container" recited earlier). Other components may or may not provide part of the Governing function. This "hardware or software" performs its functions by executing VDE Control(s) within VDE Secure Processing Environment(s).</p> <p><u>including</u>: see item #2 above</p> <p><u>aspect</u>: see item #64 above</p> <p><u>access</u>: see item #29 above</p> <p><u>contain (contained)</u>: see item #60 above</p> <p><u>secure container rule</u>: see item #63 above</p> <p><u>secure container</u>: see #59 above</p> |

| | <u>'683 Claim 2</u> | <u>MS Construction</u> |
|-----|---|--|
| | | <u>governed item</u> : see item #60 above |
| 70. | <i>hardware or software used for transmission of secure containers to other apparatuses or for the receipt of secure containers from other apparatuses.</i> | <p><u>hardware or software used for transmission of secure containers to other apparatuses or for the receipt of secure containers from other apparatuses</u>: This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites an undefined mechanism ("hardware or software") for performing a function (e.g., "transmission") without reciting particular structure that performs that function. The specification does not clearly link any particular structure to this recited function. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: a single logical piece of either hardware or software (as opposed to both) is capable of both transmission and receipt of Secure Containers, this receipt including Authenticating the intended recipient in accordance with VDE Controls Associated With the Secure Container. This "hardware or software" is separate from and in addition to the first apparatus, the recited "protected processing environment," and the recited "hardware or software used for receiving and opening secure containers." The transmission and receipt of the Secure Containers may be via bar codes in a fax transmission, or filled ovals on a form delivered through physical mail. This "hardware or software" performs its functions by executing VDE Control(s) within VDE Secure Processing Environment(s).</p> <p><u>secure container</u>: see #59 above</p> |

'721 Asserted Claim 1

| | <u>'721 Claim 1</u> | <u>MS Construction</u> |
|-----|--|---|
| 71. | 1. A security method comprising: | Claim as a whole: The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 72. | <i>digitally signing a first load module with a first digital signature designating the first load module for use by a first device class;</i> | <p><u>digitally signing a first load module with a first digital signature designating the first load module for use by a first device class:</u> Digitally Signing a particular ("first") Load Module by using a first Digital Signature as the signature Key, which signing indicates to any and all devices in the first device class that the signor authorized and restricted this Load Module for Use by that device. No VDE device can perform any execution of any Load Module without such authorization. The method ensures that the Load Module cannot execute in a particular device class and ensures that no device in that device class has the Key(s) necessary to verify the Digital Signature.</p> <p><u>digital signature:</u></p> <p>digital signature: A computationally unforgeable string of characters (e.g., bits) generated by a cryptographic operation on a block of data using some secret. The string can be generated only by an Entity that knows the secret, and hence provides evidence that the Entity must have generated it.</p> <p><u>digitally signing:</u> Creating a Digital Signature using a secret Key. (In symmetric key cryptography, a "secret key" is a Key that is known only to the sender and recipient. In asymmetric key cryptography, a "secret key" is the private Key of a public/private key pair, in which the two keys are related uniquely by a predetermined mathematical relationship such that it is computationally infeasible to determine one from the other.)</p> <p><u>load module:</u> An Executable, modular unit of machine code (which may include data) suitable for loading into Memory for execution by a processor. A Load Module is encrypted (when not within a secure processing unit) and has an Identifier that a calling process must provide to be able to use the Load Module. A Load Module is combinable with other Load Modules, and associated data, to form Executable Component Assemblies. A Load Module can execute only in a VDE Protected Processing Environment. Library routines are not Load Modules and dynamic link libraries are not Load Modules.</p> <p><u>designating:</u> Designating something for a particular Use means specifying it for and restricting it to that Use.</p> <p><u>use:</u> see item #64 above</p> <p><u>device class:</u> The generic name for a group of device types. For example, all display stations belong to the same device class. A device class is different from a device type. A device type is composed of all devices that share a common model number or family (e.g. IBM 4331 printers).</p> |
| 73. | <i>digitally signing a second load module with a second digital signature different from the first digital signature, the second digital signature designating the second load module for use by a second device class having at least one of tamper resistance and security level different from the at least one of tamper resistance and security</i> | <p><u>digitally signing a second load module with a second digital signature different from the first digital signature, the second digital signature designating the second load module for use by a second device class having at least one of tamper resistance and security level different from the at least one of tamper resistance and security level of the first device class:</u> Digitally Signing a different ("second") Load Module by using a different ("second") Digital Signature as the signature Key, which signing indicates to any and all devices in the second device class that the signor authorized and restricted this Load Module for Use by that device. No VDE device can perform any execution of any Load Module without such authorization. The method ensures that the Load Module cannot execute in a particular device class and ensures that no device in that device class has the Key(s) necessary to verify the Digital Signature. All devices in the first device class have the same persistent (not just occasional) and identified level of Tamper Resistance and the same persistent and identified Level of Security. All devices in the second device class have the same persistent and</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'721 Claim 1</u> | <u>MS Construction</u> |
|-----|---|--|
| | <i>level of the first device class;</i> | <p>identified level of Tamper Resistance and same persistent and identified Level of Security. The identified level of Tamper Resistance or identified Level of Security (or both) for the first device class, is greater than or less than the identified Level Of Tamper Resistance or identified Level of Security for the second device class.</p> <p><u>digital signature</u>: see item #72 above</p> <p><u>designating</u>: see item #72 above</p> <p><u>device class</u>: see item #72 above</p> <p><u>load module</u>: see item #72 above</p> <p><u>use</u>: see item #64.</p> <p><u>level of security</u>: An ordered measure of the degree of trustworthiness. The "security level" is persistent unless expressly noted to exist only some of the time. Also, the combination of a hierarchical classification and a set of nonhierarchical categories that represents the sensitivity of an object or the clearance of a subject. For example, Unclassified, Confidential, Secret, and Top Secret are hierarchical classifications, whereas NATO and NOFORN are non-hierarchical categories defined by the Department of Defense Trusted Computing guidelines.</p> <p><u>tamper resistance</u>: The ability of a Tamper Resistant Barrier to prevent Access, observation, and interference with information or processing encapsulated by the barrier.</p> |
| 74. | <i>distributing the first load module for use by at least one device in the first device class; and</i> | <p><u>distributing the first load module for use by at least one device in the first device class</u>: The first Load Module, Digitally Signed as indicated above, is transmitted to at least one device in the first device class.</p> <p><u>load module</u>: see item #72 above</p> <p><u>device class</u>: see item #72 above</p> |
| 75. | <i>distributing the second load module for use by at least one device in the second device class.</i> | <p><u>distributing the second load module for use by at least one device in the second device class</u>: The second Load Module, Digitally Signed as indicated above, is transmitted to at least one device in the second device class.</p> <p><u>load module</u>: see item #72 above</p> <p><u>device class</u>: see item #72 above</p> |

‘721 Asserted Claim 34

| | ‘721 Claim 34 | MS Construction |
|-----|--|---|
| 76. | 34. A protected processing environment comprising: | <u>Claim as a Whole</u> : The “Protected Processing Environment” is part of and within VDE. (See item #93 for Microsoft’s construction of VDE.) |
| 77. | a first tamper resistant barrier having a first security level, | <u>tamper resistant barrier</u> : An active device that encapsulates and separates a Protected Processing Environment from the rest of the world. It prevents information and processes within the Protected Processing Environment from being observed, interfered with, and leaving except under appropriate conditions ensuring Security. It also Controls external access to the encapsulated Secure resources, processes and information. A Tamper Resistant Barrier is capable of destroying protected information in response to Tampering attempts. <u>security level</u> : see item #73 above |
| 78. | a first secure execution space, and | <u>secure execution space</u> : An allocated Portion of the Secure Memory within a special-purpose secure processing unit which is isolated from the rest of the world, and protected from observation by (and encapsulated within) a Tamper Resistant Barrier and protected from alteration by the processor. The processor cryptographically verifies the integrity of all code loaded from Secure Memory prior to execution, executes only the code that the processor has authenticated for its use, and is otherwise Secure. |
| 79. | at least one <i>arrangement within the first tamper resistant barrier</i> that | <u>arrangement within the first tamper resistant barrier</u> : An organization of hardware and software which arrangement is located and executed wholly within the first Tamper Resistant Barrier. <u>arrangement</u> : A collection of things that have been arranged. In context, the term requires an organization of hardware and software and data, or hardware and software, or hardware and data. <u>tamper resistant barrier</u> : see item #72 above |
| 80. | <i>prevents the first secure execution space from executing the same executable accessed by a second secure execution space having a second tamper resistant barrier with a second security level different from the first security level.</i> | <u>prevents the first secure execution space from executing the same executable accessed by a second secure execution space having a second tamper resistant barrier with a second security level different from the first security level</u> : “A second secure execution space having a second tamper resistant barrier with a second security level different from the first security level”: a second Secure Execution Space (different from the first Secure Execution Space) is part of the Protected Processing Environment, and has a Tamper Resistant Barrier (different from the first Tamper Resistant Barrier) that has a persistent (not just occasional) Security Level greater than or less than the first persistent Security Level. “The same executable accessed by”: the same Executable (as opposed to, e.g., two copies of the same Executable) is simultaneously accessed by both the first Secure Execution Space and the second Secure Execution Space. “Prevents the first secure execution space from executing”: the arrangement Prevents the first Secure Execution Space, otherwise capable of executing the Executable, from executing any part of the Executable (e.g., on behalf of any user, process, or device). <u>prevents</u> : Imposes an active restraint on an action such that it cannot occur by any means or under any circumstances. <u>access</u> (accessed): see item #29 above <u>security level</u> : see item #73 above |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

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| | <u>secure execution space:</u> see item #78 above <u>tamper resistant barrier:</u> see item #72 above |
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'861 Asserted Claim 58

| | <u>'861 Claim 58</u> | <u>MS Construction</u> |
|-----|--|--|
| 81. | 58. A method of | Claim as a whole: The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 82. | <i>creating a first secure container, said method including the following steps;</i> | <p><u>creating a first secure container</u>: This preamble language is a claim limitation.</p> <p>Completely forming (as opposed to defining) the Secure Container, within a VDE Secure Processing Environment(s).</p> <p><u>secure container</u>: see item #59 above</p> |
| 83. | <i>accessing a descriptive data structure, said descriptive data structure including or addressing organization information at least in part describing a required or desired organization of a content section of said first secure container, and metadata information at least in part specifying at least one step required or desired in creation of said first secure container;</i> | <p><u>including or addressing organization information at least in part describing a required or desired organization of a content section of said first secure container, and metadata information at least in part specifying at least one step required or desired in creation of said first secure container</u>: The same single Descriptive Data Structure must either Contain within its confines or Address both Organization Information and Metadata Information.</p> <p>Both the "desired" organization of the content section and also the "desired" step, occur after the Descriptive Data Structure is accessed, not before.</p> <p>The Metadata Information explicitly identifies a procedure ("step") that must be executed in creation of the first Secure Container, as opposed to identifying a procedure to be run if later required or desired, as opposed to identifying a result or a Data Item to be included in the first Secure Container, and as opposed to identifying information which operates as a parameter for a procedure.</p> <p><u>required</u>: A condition without which an action cannot occur. A required condition acts prospectively – it does not apply to a description created at or after the creation of the object to which it applies.</p> <p><u>access</u> (accessing): see item #29 above</p> <p><u>descriptive data structure</u>: A machine-readable data structure (e.g., text file, template, etc.) Containing or Addressing descriptive information (e.g., Metadata, shorthand abstract representation, integrity constraints, Rules, instructions, etc.) about (1) the layout, generic format, attributes, or hierarchical structure of the contents section of one or a family of other data structure(s) (e.g., a rights management data structure), (2) the operations or processes used to create or Use such other data structure(s), and/or (3) the consequences of such operations. The Descriptive Data Structure is capable of being used to create or handle (e.g., read, locate information within, request information from, and/or manipulate) the other data structure(s). The Descriptive Data Structure is not Associated With the other data structure(s) and does not Contain or specify its particular contents (e.g., "Yankees Win the Pennant!").</p> <p><u>addressing</u>: Referring to something by the specific location where it is stored, without directly storing it. The location is explicitly identified by its name or number.</p> <p><u>Organization</u> (organization, organization information): The manner in which data is represented and laid out in physical storage. For example, for data organized as records: the field hierarchy, order, type and size.</p> <p><u>organize</u>: Representing and laying out data in a particular manner in physical storage.</p> <p><u>metadata information</u>: Information that describes one or more attributes of other data, and/or the processes used to create and/or Use that data. For example, Metadata Information may describe the following attributes of other data: its meaning, representation in storage, what it is used for and by whom, context, quality and condition, location, ownership, or its data elements or their attributes (name, size, data</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'861 Claim 58</u> | <u>MS Construction</u> |
|-----|---|--|
| | | type, etc.) |
| 84. | using said descriptive data structure to organize said first secure container contents; | <p><u>descriptive data structure</u>: see item #83 above</p> <p><u>including</u>: see item #2 above</p> <p><u>organize</u>: see item #83 above</p> |
| 85. | using said metadata information to <i>at least in part determine specific information required to be included in said first secure container contents</i> ; and | <p><u>at least in part determine specific information required to be included in said first secure container contents</u>: The Metadata Information is used to determine the specific value, not merely the kind, of at least some of the information that must be placed inside the Secure Container.</p> <p>The use of the Metadata Information actively requires the Secure Container creation steps to add this specific information to the first Secure Container, as opposed to the specific information being within the Secure Container for some other reason.</p> <p><u>required</u>: see item #83 above</p> <p><u>including (included)</u>: see item #2 above</p> |
| 86. | <i>generating or identifying at least one rule designed to control at least one aspect of access to or use of at least a portion of said first secure container contents.</i> | <p><u>generating or identifying at least one rule designed to control at least one aspect of access to or use of at least a portion of said first secure container contents</u>: Generating or Identifying Rule designed for these particular Secure Container contents, which is used (by VDE Control(s) executing in VDE Secure Processing Environment(s)) to limit Access to or Use of at least a Portion of the contents of the first Secure Container (by all users, processes, and devices). Without compliance with this Rule, no process, user, or device is able to take the Controlled aspect of the Controlled Access or Use action.</p> <p>The Rule is generated or Identified based at least in part on the Descriptive Data Structure.</p> <p><u>generating</u>: Producing.</p> <p><u>identifying</u>: see item #19 above</p> <p><u>rule</u>: see item #63 above</p> <p><u>control</u>: see item #17 above</p> <p><u>aspect</u>: see item #64 above</p> <p><u>access</u>: see item #29 above</p> <p><u>use</u>: see item #43 above</p> <p><u>portion</u>: see item #9 above</p> <p><u>secure container</u>: see item #59 above</p> |

'891 Asserted Claim: 1

| | <u>'891 Claim 1</u> | <u>MS Construction</u> |
|-----|---|---|
| 87. | 1. A method for using at least one | <u>Claim as a whole:</u> The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 88. | <i>resource processed in a secure operating environment at a first appliance, said method comprising:</i> | <p><u>resource processed in a secure operating environment at a first appliance:</u> This preamble language is a claim limitation. A shared facility, required by a job or task, of a first appliance's Secure Operating Environment which is processed within that Secure Operating Environment's special-purpose Secure Processing Unit. A Secure Processing Unit is a special-purpose unit isolated from the rest of the world in which a hardware Tamper Resistant Barrier encapsulates a processor and internal Secure Memory. The Tamper Resistant Barrier prevents all unauthorized interference, removal, observation, and Use of the information and processes within it. The processor cryptographically verifies the integrity of all code loaded from the Secure Memory prior to execution, executes only the code that the processor has authenticated for its Use, and is otherwise Secure.</p> <p><u>resource processed:</u> A record containing control information, which record is stored and acted upon within a processing environment.</p> <p><u>secure operating environment:</u> Same as Secure Processing Environment.</p> |
| 89. | <i>securely receiving a first entity's control at said first appliance, said first entity being located remotely from said operating environment and said first appliance;</i> | <p><u>securely receiving a first entity's control at said first appliance:</u> This claim language falls within 35 U.S.C. § 112, ¶ 6. It recites a step or result ("Securely receiving") without reciting an action that achieves that result. The specification does not clearly link any particular action to this recited step. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: A first appliance obtaining a VDE Secure Container encapsulating a Control created, selected, or modified by a first entity, as part of a communication encrypted on the communications level, authenticating the first appliance in accordance with VDE Controls Associated With the Secure Container, and accepting the Secure Container.</p> <p><u>entity:</u> Any person or organization.</p> <p><u>entity's control:</u> Control created, modified, or selected by any person or organization to Control a particular Use of or Access to particular Protected information by a particular user(s).</p> <p><u>control:</u> see item #17 above</p> <p><u>operating environment:</u> see item #88 above</p> |
| 90. | <i>securely receiving a second entity's control at said first appliance, said second entity being located remotely from said operating environment and said first appliance, said second entity being different from said first entity; and</i> | <p><u>securely receiving a second entity's control at said first appliance:</u> This claim language falls within 35 U.S.C. § 112, 6. It recites a step or result ("securely receiving") without reciting an action that achieves that result. The specification does not clearly link any particular action to this recited step. Part of the recited function is performed by Communications Controller 666, I/O Controller 600, SPE 503/SPU 500 (particularly "SPU Encryption/Decryption Engine 522" and NVRAM 534b).</p> <p>The recited function requires: A first appliance obtaining a VDE Secure Container encapsulating a Control created, selected, or modified by a second entity, as part of a communication encrypted on the communications level, Authenticating the first appliance in accordance with VDE Controls Associated With the Secure Container, and accepting the Secure Container.</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'891 Claim 1</u> | <u>MS Construction</u> |
|-----|---|--|
| | | <p><u>entity's control</u>: see item #89 above</p> <p><u>control</u>: see item #17 above</p> |
| 91. | <i>securely processing a data item at said first appliance, using at least one resource, including</i> | <p>securely processing a data item at said first appliance, using at least one resource, <u>including</u> : Performing an operation, inside the special-purpose Secure Processing Unit of the first appliance, on a Data Item inside the Secure Processing Unit. The operation cannot be observed from outside the Secure Processing Unit and is performed only after the integrity of the program code for performing such operation is cryptographically verified. A Secure Processing Unit is a special-purpose unit isolated from the rest of the world in which a hardware Tamper Resistant Barrier encapsulates a processor and internal Secure Memory. The Tamper Resistant Barrier prevents all unauthorized interference, removal, observation, and Use of the information and processes within it. The processor cryptographically verifies the integrity of all code loaded from the Secure Memory prior to execution, executes only the code that the processor has authenticated for its Use, and is otherwise Secure.</p> <p><u>control</u>: see item #17 above</p> <p><u>data item</u>: An individual unit of digital information representing a single value, such as that stored in a field of a larger Record in a database. It is the smallest useful unit of named information in the system.</p> <p><u>resource</u>: A shared facility of a computing system or operating system, which is required by a job or task, and is processed by a processing unit.</p> |
| 92. | <i>securely applying, at said first appliance through use of said at least one resource said first entity's control and said second entity's control to govern use of said data item.</i> | <p>securely applying, at said first appliance through use of said at least one resource said first entity's control and said second entity's control to govern use of said data item: Processing the resource (component part of a first appliance's Secure Operating Environment) within the Secure Operating Environment's special-purpose Secure Processing Unit to execute the first Control and second Control in combination within the Secure Processing Unit. This execution of these Controls Governs all Use of the Data Item by all users, processes, and devices. The processing of the Resource and execution of the Controls cannot be observed from outside the Secure Processing Unit and is performed only after the integrity of the Resource and Controls is cryptographically verified. A Secure Processing Unit is a special-purpose unit isolated from the rest of the world in which a hardware Tamper Resistant Barrier encapsulates a processor and internal Secure Memory. The Tamper Resistant Barrier prevents all unauthorized interference, removal, observation, and Use of the information and processes within it. The processor cryptographically verifies the integrity of all code loaded from the Secure Memory prior to execution, executes only the code that the processor has authenticated for its Use, and is otherwise Secure.</p> <p><u>control</u>: see item #17 above</p> <p><u>data item</u>: see item #91 above</p> <p><u>resource</u>: see item #91 above</p> <p><u>use</u>: see item #43 above</p> <p><u>govern</u>: see Control (v.) item #7 above</p> |

| | '900 Claim 155 | MS Construction |
|-----|--|---|
| 93. | 155. A virtual distribution environment comprising | <p><u>Claim as a Whole:</u> The "virtual distribution environment" is VDE.</p> <p><u>VDE/Virtual Distribution Environment:</u></p> <p><u>Data Security and Commerce World:</u> InterTrust's February 13, 1995, patent application described as its "invention" a Virtual Distribution Environment ("VDE invention") for Securing, administering, and auditing all Security and commerce digital information within its multi-node world (community). VDE guarantees to all VDE "participants" identified in the patent application that it will limit all Access to and Use (i.e., interaction) of such information to Authorized activities and amounts, will ensure any requested reporting of and payment for such Use, and will maintain the availability, secrecy, integrity, non-repudiation and authenticity of all such information present at any of its nodes (including Protected content, information about content usage, and content Controls.).</p> <p>VDE is Secure against at least the threats identified in the February 1995, patent application to this availability (no user may delete the information without Authorization), secrecy (neither available nor disclosed to unauthorized persons or processes), integrity (neither intentional nor accidental alteration), non-repudiation (neither the receiver can disavow the receipt of a message nor can the sender disavow the origination of that message) and authenticity (asserted characteristics are genuine). VDE further provides and requires the components and capabilities described below. Anything less than or different than this is not VDE or the described "invention."</p> <p><u>Secure Processing Environment:</u> At each node where VDE-Protected information is Accessed, Used, or assigned control information, VDE requires a Secure Processing Environment. A Secure Processing Environment is uniquely identifiable, self-contained, non-circumventable, and trusted by all other VDE nodes to protect the availability, secrecy, integrity and authenticity of all information identified in the patent application as being Protected, and to guarantee that such information will be Accessed and Used only as expressly Authorized by the associated VDE Controls, and to guarantee that all requested reporting of and payments for protected information use will be made. A Secure Processing Environment is formed by, and requires, a Secure Processing Unit having a hardware Tamper Resistant Barrier encapsulating a processor and internal Secure Memory. The Tamper Resistant Barrier prevents all unauthorized interference, removal, observation, and other Use of the information and processes within it.</p> <p><u>VDE Controls:</u> VDE Allows Access to or Use of Protected information and processes only through execution of (and satisfaction of the requirements imposed by) independent, special-purpose, Executable VDE Control(s). Each VDE Control is a Component Assembly dedicated to a particular activity (e.g., editing, modifying another Control, a user-defined action, etc.), particular user(s), and particular protected information. Each separate information Access or Use is independently Controlled by independent VDE Control(s). A VDE Control can execute only within a Secure Processing Environment. Each VDE Control is assembled, within a Secure Processing Environment, from independently deliverable modular components (e.g., Load Modules or other Controls), dynamically in response to an information Access or Use request. The dynamic assembly of a Control is directed by a "blueprint" Record (put in place by one or more VDE users) Containing control information identifying the exact modular code components to be assembled and executed to Govern this particular activity on this particular information by this particular user(s). Each Control is independently assembled, loaded and delivered vis-à-vis other Controls. Control information and Controls are extensible and can be configured and modified by all users, and combined by all users with any other VDE control information or Controls (including that provided by other users), subject only to "senior" user Controls. Users can assign control information and Controls to all of or an arbitrarily fine, user-defined Portion of the Protected information, such as a single paragraph of a document, as opposed to being limited to file-based controls.</p> |

| '900 Claim 155 | MS Construction |
|----------------|---|
| | <p>VDE Controls reliably limit Access and Use of the protected information to Authorized activities and amounts.</p> <p><u>VDE Secure Container:</u> A VDE Secure Container is a self-contained, self-protecting data structure which (a) encapsulates information of arbitrary size, type, format, and organization, including other, nested, containers, (b) cryptographically protects that information from all unauthorized Access and Use, (c) provides encrypted storage-management functions for that information, such as hiding the physical storage location(s) of its Protected contents, (d) permits the Association of itself and/or all of or arbitrary Portions of its contents with Controls and control information Governing Access to and Use thereof, and (e) Prevents such Use or Access (as opposed to merely Preventing decryption) until it is opened. A Secure Container Can Be opened only as expressly Allowed by the associated VDE Control(s), only within a Secure Processing Environment, and only through decryption of its encrypted header. A Secure Container is not directly accessible to any non-VDE calling process. All such calls are intercepted by VDE. The creator of a Secure Container can assign (or allow others to assign) control information to all of or any arbitrary Portion of a Secure Container's contents, or to an empty Secure Container (to Govern the addition of contents to the Secure Container, and Access to or Use of those contents). A container is not a Secure Container merely because its contents are encrypted and signed. All VDE-Protected information (including protected content, information about content usage, and Controls) is encapsulated within a Secure Container whenever stored outside a Secure Processing Environment or Secure Database.</p> <p><u>Non-Circumventable:</u> VDE is non-circumventable (sequestered). It intercepts all attempts by any and all users, processes, and devices, to Access or Use, such as observing, interfering with, or removing) Protected information, and Prevents all such attempts other than as Allowed by execution of (and satisfaction of all requirements imposed by) Associated VDE Controls within Secure Processing Environment(s).</p> <p><u>Peer to Peer:</u> VDE is peer-to-peer. Each VDE node has the innate ability to perform any role identified in the patent application (e.g., end user, content packager, distributor, Clearinghouse, etc.), and can protect information flowing in any direction between any nodes. VDE is not client-server. It does not pre-designate and restrict one or more nodes to act solely as a "server" (a provider of information (e.g., authored content, control information, etc.) to other nodes) or "client" (a requestor of such information). All types of protected-content transactions can proceed without requiring interaction with any server.</p> <p><u>Comprehensive Range of Functions:</u> VDE comprehensively Governs all Security and commerce activities identified in the patent application, including (a) metering, budgeting, monitoring, reporting, and auditing information usage, (b) billing and paying for information usage, and (c) negotiating, signing and enforcing contracts that establish users' rights to Access or Use information.</p> <p><u>User-Configurable:</u> The specific protections Governing specific VDE-Protected information are specified, modified, and negotiated by VDE's users. For example, VDE enables a consumer to place limits on the nature of content that may be accessed at her node (e.g., no R-rated material) or the amount of money she can spend on viewing certain content, both subject only to other users' senior Controls.</p> <p><u>General Purpose; Universal:</u> VDE is universal as opposed to being limited to or requiring any particular type of appliance, information, or commerce model. It is a single, unified standard and environment within which an unlimited range of electronic rights protection, data Security, electronic currency, and banking applications can run.</p> <p><u>Flexible:</u> VDE is more flexible than traditional information Security and commerce</p> |

| | <u>'900 Claim 155</u> | <u>MS Construction</u> |
|------|---|---|
| | | systems. For example, VDE allows consumers to pay for only the user-defined Portion of information that the user actually uses, and to pay only in proportion to any quantifiable VDE event (e.g., for only the number of paragraphs displayed from a book), and allows editing the content in VDE containers while maintaining its Security. |
| 94. | <i>a first host processing environment comprising</i> | <p><u>a first host processing environment comprising:</u> A Host Processing Environment that encompasses the recited computer hardware (central processing unit, main Memory, and mass storage) and certain VDE Protected Processing Environment software loaded in that main Memory and executing in that central processing unit, but does not encompass software, such as the recited Tamper Resistant Software, which is stored in mass storage and not executing.</p> <p><u>host processing environment:</u> A processing environment within a VDE node which is not a Secure Processing Environment. A "host processing environment" may either be "secure" or "not secure." A "secure host processing environment" is a self-contained Protected Processing Environment, formed by loaded, Executable programming executing on a general purpose CPU (not a Secure Processing Unit) running in protected (privileged) mode. A "non-secure host processing environment" is formed by loaded, Executable programming executing on a general purpose CPU (not a Secure Processing Unit) running in user mode.</p> |
| 95. | a central processing unit; | |
| 96. | main memory operatively connected to said central processing unit; | <u>memory:</u> see item #3 above |
| 97. | mass storage operatively connected to said central processing unit and said main memory; | <u>memory:</u> see item #3 above |
| 98. | <i>said mass storage storing tamper resistant software</i> | <p><u>said mass storage storing tamper resistant software:</u> The Tamper Resistant Software is physically stored within, as opposed to being merely Addressed by, the mass storage.</p> <p><u>tamper resistant software:</u> Software that is encapsulated and executed wholly within a Tamper Resistant Barrier.</p> |
| 99. | <i>designed to be loaded into said main memory and executed by said central processing unit,</i> | <u>designed to be loaded into said main memory and executed by said central processing unit:</u> The Tamper Resistant Software is capable of being loaded into only said main Memory and is capable of being executed only by said central processing unit. |
| 100. | <i>said tamper resistant software comprising: machine check programming which derives information from one or more aspects of said host processing environment, one or more storage locations storing said information;</i> | <p><u>said tamper resistant software comprising: machine check programming which derives information from one or more aspects of said host processing environment, one or more storage locations storing said information:</u> The Tamper Resistant Software within said mass storage includes one or more storage locations within it. These storage locations are designated to store, and must store, information Derived by the Machine Check Programming, and must not store any other information.</p> <p><u>machine check programming:</u> Executable programming that when executed checks a machine and generates a unique "machine signature" which distinguishes the physical machine from all other machines. This machine check programming code sometimes is invoked by integrity programming.</p> <p><u>host processing environment:</u> see item #94 above</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'900 Claim 155</u> | <u>MS Construction</u> |
|------|--|--|
| | | <p><u>derives</u>: To retrieve from a specified source.</p> <p><u>aspect</u>: see item #64 above</p> |
| 101. | <i>derives information from one or more aspects of said host processing environment</i> | <p><u>derives information from one or more aspects of said host processing environment</u>: Deriving from the Host Processing Environment hardware one or more values that uniquely and persistently Identify the Host Processing Environment and distinguish it from other Host Processing Environments.</p> <p>The "one or more aspects of said host processing environment" are persistent elements or properties of the Host Processing Environment itself that are capable of being used to distinguish it from other environments, as opposed to, e.g., data or programs stored within the mass storage or main Memory, or processes executing within the Host Processing Environment.</p> <p><u>host</u>: see item #94 above</p> <p><u>derives</u>: see item #100 above</p> <p><u>aspect</u>: see item #64 above</p> |
| 102. | <i>one or more storage locations storing said information;</i> | <p><u>One or more storage locations</u>: One or more logical storage locations within the Tamper Resistant Software storing only information Derived by the Machine Check Programming.</p> |
| 103. | <i>integrity programming which causes said machine check programming to derive said information, compares said information to information previously stored in said one or more storage locations, and</i> | <p><u>integrity programming</u>: Executable programming that when executed checks and reports on the integrity of a device or process. "Integrity" means the property that information has not been altered either intentionally or accidentally.</p> <p><u>information previously stored in said one or more storage locations</u>: Any information once stored in said "one or more storage locations storing said information," but not stored therein when the recited comparison occurs.</p> <p><u>information previously stored</u>: Information that once was stored but is no longer stored.</p> <p><u>derive</u>: see item #100 above</p> <p><u>compares</u>: A processor operation that evaluates two quantities and sets one of three flag conditions as a result of the comparison – greater than, less than, or equal to.</p> |
| 104. | <i>generates an indication based on the result of said comparison; and</i> | <p><u>generates an indication based on the result of said comparison</u>: Producing an indication based on the result of the "compares" step. The "indication" need not be displayed to a user. The indication is based solely on that result. There are only two possible indications: exact match found or exact match not found.</p> <p><u>comparison</u>: see item #103 above</p> |
| 105. | <i>programming which takes one or more actions based on the state of said indication;</i> | <p><u>programming which takes one or more actions based on the state of said indication</u>: Executable programming code that is a part of the Tamper Resistant Software, when executed, and not a part of the Host Processing Environment. Whenever the recited indication is generated, no matter what it indicates, this code (executing on the CPU for which it was designed and loaded in the Memory for which it was designed) must take an action, or more than one action. The particular action(s) taken must be based</p> |

| | <u>'900 Claim 155</u> | <u>MS Construction</u> |
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| | | solely on the state of that indication. |
| 106. | said one or more actions including <i>at least temporarily halting further processing.</i> | <p>at least temporarily halting further processing: The action(s) taken by this programming must encompass Halting or temporarily Halting all further processing of the Host Processing Environment and any processes running within it.</p> <p><u>halting</u>: Stopping execution of a running (executing) process unconditionally (i.e., without providing any specific condition for resumption). For example, executing an instruction known as a "breakpoint halt instruction."</p> |

'912 Asserted Claim: 8

| | <u>'912 Claim 8</u> | <u>MS Construction</u> |
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| 107. | 8. A process comprising the following steps: | <u>Claim as a whole:</u> The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 108. | accessing a first record containing information directly or indirectly identifying one or more elements of a first component assembly, | <p><u>record:</u> A data structure that is a collection of fields (elements), each with its own name and type. Unlike an array, whose elements are accessed using an index, the elements of a record are accessed by name. A record can be accessed as a collective unit of elements, or the elements can be accessed individually.</p> <p><u>identifying:</u> see item #19 above</p> <p><u>access:</u> see item #29 above</p> <p><u>comparison:</u> see item #103 above</p> <p><u>component assembly:</u> A cohesive Executable component created by a channel which binds or links together two or more independently deliverable Load Modules, and Associated data. A Component Assembly is assembled, and executes, only within a VDE Secure Processing Environment. A Component Assembly is assembled dynamically in response to, and to service, a particular content-related activity (e.g., a particular Use request). Each VDE Component Assembly is assigned and dedicated to a particular activity, particular user(s), and particular Protected information. Each Component Assembly is independently assembled, loadable and deliverable vis-à-vis other Component Assemblies. The dynamic assembly of a Component Assembly is directed by a "blueprint" Record Containing Control information for this particular activity on this particular information by this particular user(s). Component Assemblies are extensible and can be configured and reconfigured (modified) by all users, and combined by all users with other Component Assemblies, subject only to other users' "senior" Controls.</p> |
| 109. | at least one of said elements including at least some executable programming, | <p><u>executable programming:</u></p> <p>Executable: A cohesive series of machine code instructions in a format that can be loaded into Memory and run (executed) by a connected processor.</p> <p>executable programming: A cohesive series of machine code instructions, comprising a computer program, in a format that can be loaded into Memory and run (executed) by a connected processor. (A "computer program" is a complete series of definitions and instructions that when executed on a computer will perform a required or requested task.)</p> <p><u>including:</u> see item #2 above</p> |
| 110. | at least one of said elements constituting a load module, | <u>load module:</u> see item #72 above |
| 111. | said load module including executable programming and a header, | <p><u>load module:</u> see item #72 above</p> <p><u>including:</u> see item #2 above</p> <p><u>executable programming:</u> see item #109 above</p> |
| 112. | said header including an execution space identifier identifying at least one aspect of an execution space required for use | <p><u>identifying at least one aspect of an execution space required for use and/or execution of the load module:</u> Defining fully, without reference to any other information, at least one of the persistent elements or properties (aspects) (that are capable of being used to distinguish it from other environments of an Execution Space) that are Required for any Use, and/or for any execution, of the Load Module. An Execution Space without</p> |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

| | <u>'912 Claim 8</u> | <u>MS Construction</u> |
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| | <i>and/or execution of the load module associated with said header;</i> | <p>all of those Required aspects is incapable of making any such execution and/or other Use (e.g., Copying, displaying, printing) of the Load Module. <u>including:</u> see item #2 above</p> <p><u>execution space identifier:</u> A value that uniquely identifies a particular execution space.</p> <p><u>execution space:</u> A processor-addressable physical Memory into which data and Executable code can be loaded, which is assigned to a single executing process while that process is actively executing. Memory holding "swapped out" processes or Executables is not part of an "execution space."</p> <p><u>load module:</u> see item 110 above</p> <p><u>required:</u> see item #83 above</p> <p><u>aspect:</u> see item #64 above</p> <p><u>associated with:</u> see item #4 above</p> <p><u>identifying:</u> see item #19 above</p> |
| 113. | <i>said execution space Identifier provides the capability for distinguishing between execution spaces providing a higher level of security and execution spaces providing a lower level of security;</i> | <p><u>said execution space identifier provides the capability for distinguishing between execution spaces providing a higher level of security and execution spaces providing a lower level of security:</u> The Execution Space Identifier, by itself, provides the Load Module with the capability of determining the persistent Level of Security of any Execution Space in which it is loaded, and of distinguishing between any two Execution Spaces based on their respective, determined persistent (not just occasional) "Levels Of Security." This capability extends to at least two Execution Spaces providing a higher Level of Security and at least two Execution Spaces providing a lower Level of Security.</p> <p><u>execution space identifier:</u> see item #112 above</p> <p><u>execution space:</u> see item #112 above</p> <p><u>level of security:</u> see Security Level, item #73 above</p> |
| 114. | <i>using said information to identify and locate said one or more elements;</i> | <u>identify:</u> see item #19 above |
| 115. | <i>accessing said located one or more elements;</i> | <u>access:</u> see item #29 above |
| 116. | <i>securely assembling said one or more elements to form at least a portion of said first component assembly;</i> | <p><u>securely assembling:</u> Securely (1) linking or binding plural distinct elements together in a particular manner (specified by authenticated assembly instructions) into a single cohesive Executable unit so the elements can directly reference each other element within the resulting assembly, within a VDE Secure Processing Environment, (2) validating and verifying the authenticity and integrity of each element (e.g., that it has not been modified from or substituted for the correct element) immediately prior to binding it into the assembly, and (3) ensuring that the elements are linked together only in ways that are intended by the VDE participants who created the elements and/or specified the assembly thereof.</p> <p><u>component assembly:</u> see item #108 above</p> |
| 117. | <i>executing at least some of said executable programming; and</i> | <u>executable programming:</u> see item #109 above |

| | <u>'912 Claim 8</u> | <u>MS Construction</u> |
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| 118 | <i>checking said record for validity prior to performing said executing step.</i> | <p><u>checking said record for validity prior to performing said executing step:</u> Before executing any Executable Programming encompassed within any element which is directly or indirectly identified by any information Contained within the first Record, evaluating, within a VDE Secure Processing Environment, the values and formats of all data fields within the first Record and confirming that they have legitimate values and formats.</p> <p><u>record:</u> see item #108 above</p> <p><u>validity:</u> The state in which authenticated data conforms to predetermined completeness and consistency parameters.</p> |

'912 Asserted Claim 35

| | <u>'912 Claim 35</u> | <u>MS Construction</u> |
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| 119. | 35. A process comprising the following steps: | <u>Claim as a whole</u> : The recited method is performed within a VDE. (See item #93 for Microsoft's construction of VDE.) |
| 120. | at a first processing environment receiving a first record from a second processing environment remote from said first processing environment; | <u>processing environment</u> : A standardized, well-defined, self-contained, computing base, formed by hardware and executing code, that provides an "interface" and set of resources which can support different applications, on different types of hardware platforms. In the context of claim 35 of the '912 patent: a Secure Processing Environment. <u>record</u> : see item #108 above |
| 121. | said first record being received in a secure container; | <u>received in a secure container</u> : The first Processing Environment obtained a VDE Secure Container encapsulating the Record inside, and authenticated the intended recipient in accordance with VDE Controls Associated With the Secure Container, and accepted the Secure Container. <u>secure container</u> : see item #59 above |
| 122. | said first record containing identification information directly or indirectly identifying one or more elements of a first component assembly; | <u>containing</u> : see item #60 above <u>identifying</u> : see item #19 above <u>component assembly</u> : see item #108 above |
| 123. | at least one of said elements including at least some executable programming; | <u>including</u> : see item #2 above |
| 124. | said component assembly allowing access to or use of specified information; | <u>said component assembly allowing access to or use of specified information</u> : The Component Assembly identifies specific information (the specific value, not merely the kind of information) over which it (by itself and with no other information), executing in a VDE Secure Processing Environment, Allows Access or Use (as opposed to Access "and" Use). Unless Allowed by the Component Assembly, no user, process, or device is able to Access or Use the specified information. The Component Assembly is Associated With and dedicated to this particular specified information. <u>component assembly</u> : see item #108 above <u>allow (allowing)</u> : see item #10 above <u>access</u> : see item #29 above |
| 125. | said secure container also including a first of said elements; | <u>secure container</u> : see item #59 above <u>including</u> : see item #2 above |
| 126. | accessing said first record; | <u>access</u> : see item #29 above <u>record</u> : see item #108 above |
| 127. | using said identification information to identify and locate said one or more elements; | <u>identify</u> : see item #19 above |

EXHIBIT A TO JOINT CLAIM CONSTRUCTION STATEMENT

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| 128. | said locating step including locating a second of said elements at a third processing environment located remotely from said first processing environment and said second processing environment; | <u>processing environment</u> : see item #120 above |
| 129. | accessing said located one or more elements; | <u>access</u> (accessing): see item #29 above |
| 130. | said element accessing step including retrieving said second element from said third processing environment; | |
| 131. | securely assembling said one or more elements to form at least a portion of <i>said first component assembly specified by said first record</i> ; and | <p><u>said first component assembly specified by said first record</u>: The first Record by itself Contains sufficient information to unambiguously Identify the assembled Component Assembly, including all of its elements.</p> <p>This limitation is inconsistent with the recitation "first record containing identification information directly or indirectly identifying one or more elements of first component assembly."</p> <p><u>securely assembling</u>: see item #116 above</p> <p><u>component assembly</u>: see item #108 above</p> <p><u>record</u>: see item #108 above</p> |
| 132. | executing at least some of said executable programming. | <u>executable programming</u> : see item #109 above |
| 133. | said executing step taking place at said first processing environment. | <u>processing environment</u> : see item #120 above |